

REMARKS

This is intended as a full and complete response to the Office Action dated April 30, 2007, having a shortened statutory period for response extended one-month set to expire on August 30, 2007. Please reconsider the claims pending in the application for reasons discussed below.

Claims 2-7, 9-21, and 40-50 remain pending in the application after entry of this response. Claims 2-7, 9-21, and 40-46 stand rejected by the Examiner. New claims 47-50 have been added. Reconsideration of the pending claims is requested for reasons presented below.

Claim Rejections Under 35 U.S.C. § 112

Claims 43-46 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended claims 43 and 45 to overcome this rejection. Removal of the rejection is therefore requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 2-7, 9-21, and 40-46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Klosterman, et al.* in combination with *Haruch, et al.* (4,349,156), *Klosterman, et al.* (4,787,404), *JP 57-154836* (JP'836), *EP 548408* (EP408), and *Meyer, et al.* (5,730,163).

There is no motivation to combine the *Klosterman, et al.* reference with the *Haruch, et al.* reference. The *Klosterman, et al.* reference teaches a nozzle for accelerating a cleaning liquid to clean a surface. The *Haruch, et al.* reference teaches away from using the nozzle to clean a surface. The primary purpose of the *Haruch, et al.* reference is a nozzle for snow making. For example, *Haruch, et al.* states "the very fine atomized spray particles provided by the added air atomization...affords the most efficient utilization of both hydraulic and pneumatic energy by using a proper

combination of high velocity air and liquid particularly adapted to making snow, as at ski resorts." (Col. 1, ln. 61-66). The *Haruch, et al.* reference goes on to state that "[t]he primary purpose of the invention is the provision of a spray nozzle...to achieve very fine atomization." (Col. 2, ln. 50-53).

Moreover, the combination of the coaxial tubes of the *Klosterman* reference with the *Haruch et al.* reference would frustrate the purpose of the *Klosterman* nozzle. The *Haruch, et al.* reference requires injecting the air and liquid at a 90° angle in order to maximize turbulence in the fluids. For example, *Haruch, et al.* states that the "[t]he air is conducted through the air chamber 13 and transmitted perpendicularly against the unstable liquid in the expansion chamber through the right angle openings 27 and 25, both at high velocity, to create maximum agitation and turbulence" (Col. 4, ln. 63-68). This is completely contrary to coaxial tubes of the *Klosterman, et al.* reference which requires a coaxial arrangement for the invention to function. Therefore, *Haruch, et al.* teaches away from a combination with *Klosterman, et al.* Thus, there is no motivation to combine the coaxial bores of *Klosterman, et al.* with *Haruch, et al.*

The *Klosterman, et al.* reference does not teach a downstream fluid port portion of the nozzle device is narrower than the upstream portion. The JP '836, EP 208, and the *Meyer, et al.* references do not overcome the shortcomings of the *Klosterman et al.* reference. Therefore, Applicant believes that claims 2-7, 9-21, and 40-48 are in condition for allowance.

Regarding claim 45, the EP '408 reference does not disclose impacting a plurality of blades as recited in claims 45-46.

New Claims

New claims 47-50 have been added. No new matter has been added. Claims 47 and 48 depend from claim 40. As stated above, Applicant believes that claim 40 is in condition for allowance. Thus, Applicant believes that claims 47 and 48 are also in condition for allowance.

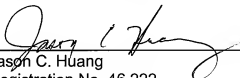
The references cited by the Examiner do not teach, show, or suggest flowing a liquid through a central bore of a nozzle housing and flowing a gas through a plurality of

gas channels formed in the nozzle housing radially around the central bore as recited in claims 47-50. Therefore, Applicant believes that claims 47-50 are in condition for allowance.

Conclusion

The references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed. Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully requests that the claims be allowed.

Respectfully submitted,



Jason C. Huang
Registration No. 46,222
PATTERSON & SHERIDAN, L.L.P.
3040 Post Oak Blvd. Suite 1500
Houston, TX 77056
Telephone: (713) 623-4844
Facsimile: (713) 623-4846
Attorney for Applicant(s)